

STINGER[®] PUMP FLUIDIZED POWDER CONVEYING



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Portable Stinger[®] Pump

APPLICATION

The Stinger[®] Pump is a good choice for:

- ▶ Unloading fine powders from bulk bags to process vessels
- ▶ Transferring powders from paper bag dump stations to process vessels
- ▶ Processes that require inert gas blanketing of powder
- ▶ Conveying applications where space is limited
- ▶ Conveying applications with multiple discharge destinations
- ▶ When conveying vertically and weighing is required

**ADVANCED
TECHNOLOGY
PROVEN DESIGN**

Young Industries Patented Stinger[®] Convey System utilizes Transflow fluidization media in product contact areas of the system to fluidize and condition fine powders. In a fluidized condition, powder flow properties change so that conveying requires less energy than other types of pneumatic or mechanical systems. The Stinger[®] convey tubing is completely lined with Transflow fluidization media so that the powder being conveyed retains its fluidized properties from inlet to discharge. Our unique Patented double-bedded fluidization process gives the Stinger[®] system the ability to control and distribute fluidization gas throughout the system. Simple.... Reliable.... Low velocity conveying.

Stinger[®] Convey Systems typically require 3-10 PSIG of convey line pressure and low CFM of gas to convey. Since the interior of the tubing is lined with our Transflow media, there is reduced friction between the powder being conveyed and the wall of the tubing. This results in less energy needed to move the powder, and low convey velocities.

The Stinger[®] Pump like all Stinger[®] systems uses our patented powder-fluidized tubing. The inlet for this system uses a Transflow lined Powder Fluidization housing with either 1.25 or 3 cu. ft of capacity. The inlet of the housing is sealed using a PowderFlow[®] Butterfly Valve. The Stinger[®] Pump is used to convey powders to mixers, reactors, or other process vessels.

Stinger[®] fluidized powder conveying is being used for conveying many varieties of cohesive powders and pigments. The Transflow lining of the pump and tubing eliminate any surfaces where the cohesive powders can adhere. Stinger[®] technology has been proven to handle powders that other types of conveyors simply will not.

STINGER® PUMP FLUIDIZED POWDER CONVEYING



STINGER® PUMP SYSTEM

The operation of the pump is simple, with all facets of the operation controlled by sequential timing with a PLC control system.

1. The Inlet PowderFlow® valve opens and powder from the process above flows into the pump housing for a pre-set period.
2. The Inlet Valve closes
3. Low pressure air a 1-3 PSIG is introduced into the Stinger® convey tubing.
4. The Pump Housing is pressurized with low pressure 3-10 PSIG to push the powder through the convey line to the destination for a pre-set period.
5. The cycle is repeated

The system is simple to operate and has minimal moving parts. The Stinger® Pump Convey System is an excellent choice when product degradation is a concern. With the Transflow lining of the system minimizing friction, in combination with ultra-low velocity conveying, it has very little degradation for most powders.

TYPICAL POWDERS CONVEYED.....FUMED SILICA..... TITANIUM DIOXIDE.....CARBON BLACK.....IRON OXIDE..... PVC RESIN.....

CONVEYOR LENGTH

The Stinger® Pump Conveyor is typically used to convey powders over relatively short distances. In most cases the combined horizontal and vertical length of the system is less than 50 ft. The Stinger® Pump is a good choice when the need the discharge of the system is at a higher elevation than the inlet. The Stinger® elbows allow the system to be routed as needed by the application.

CONVEY CAPACITY

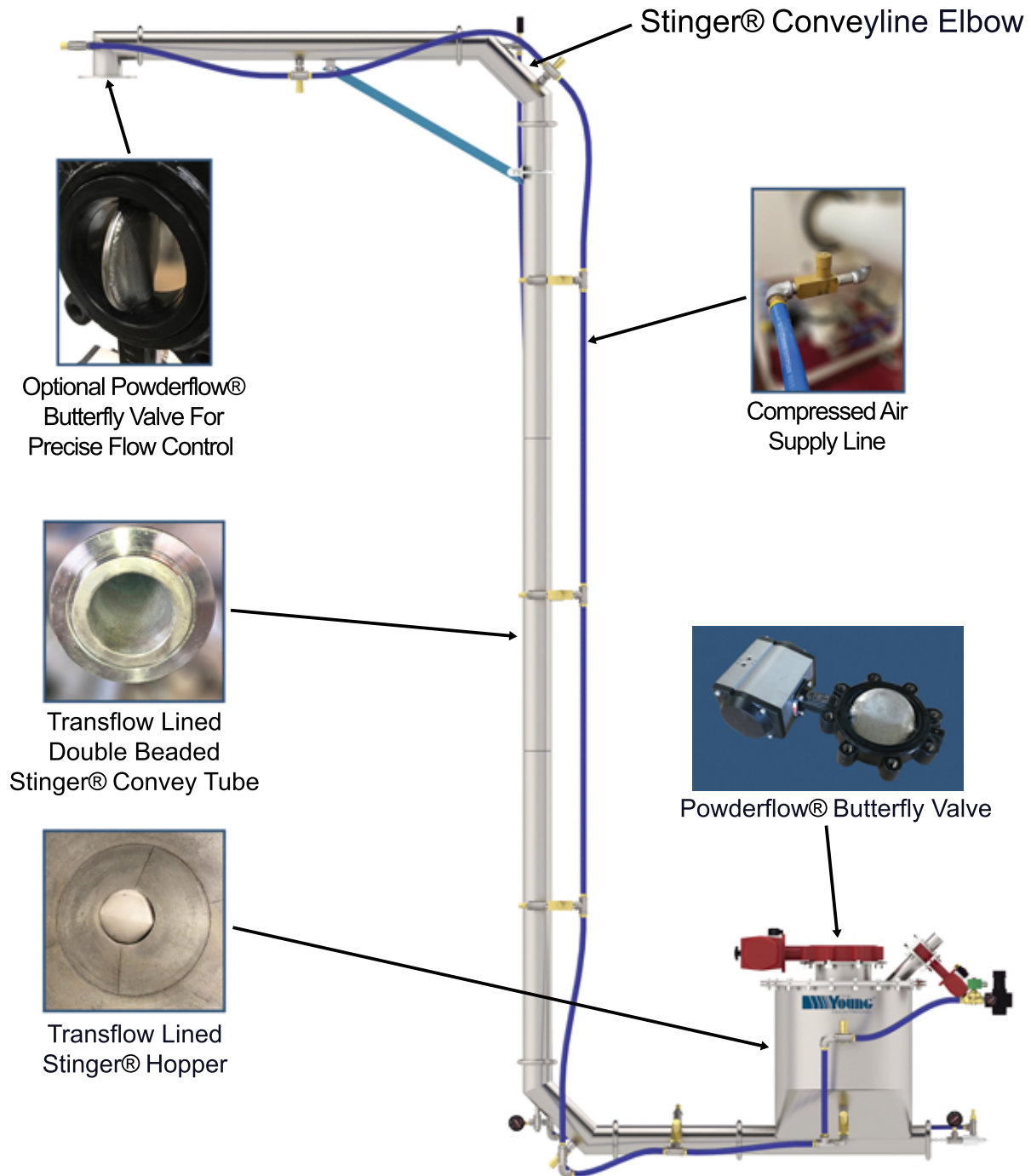
The Stinger® Pump is available in two sizes. 1.5 cu. ft. and 3 cu. ft. volume. Both sizes are available with either 2" or 3" diameter Stinger® convey lines. The capacity of the system is based on how quickly the Pump housing is filled and time it takes to convey powder from the Pump housing to the system discharge. The time varies depending on the powder being conveyed, the line size and the system length. In general terms the estimated capacity is

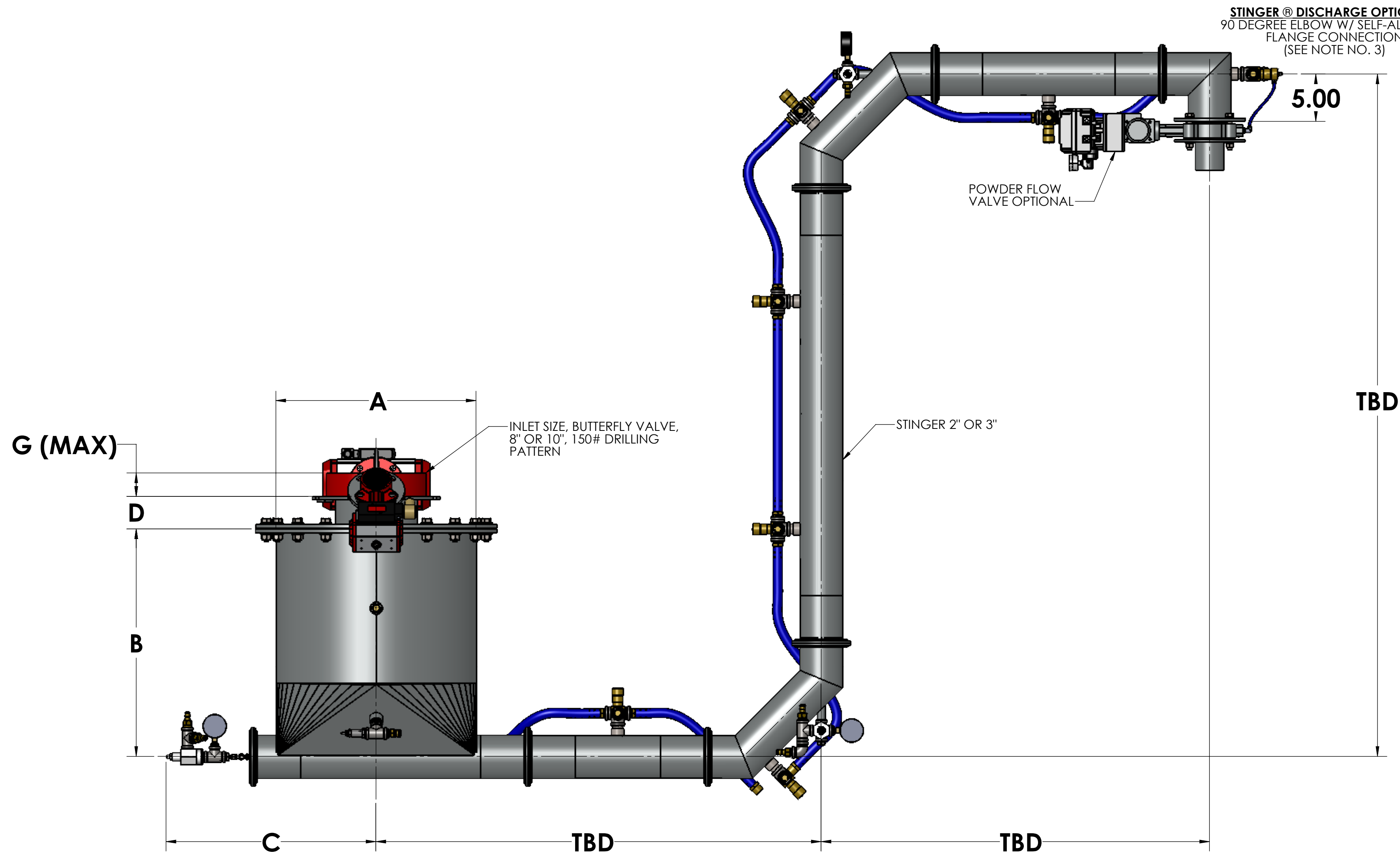
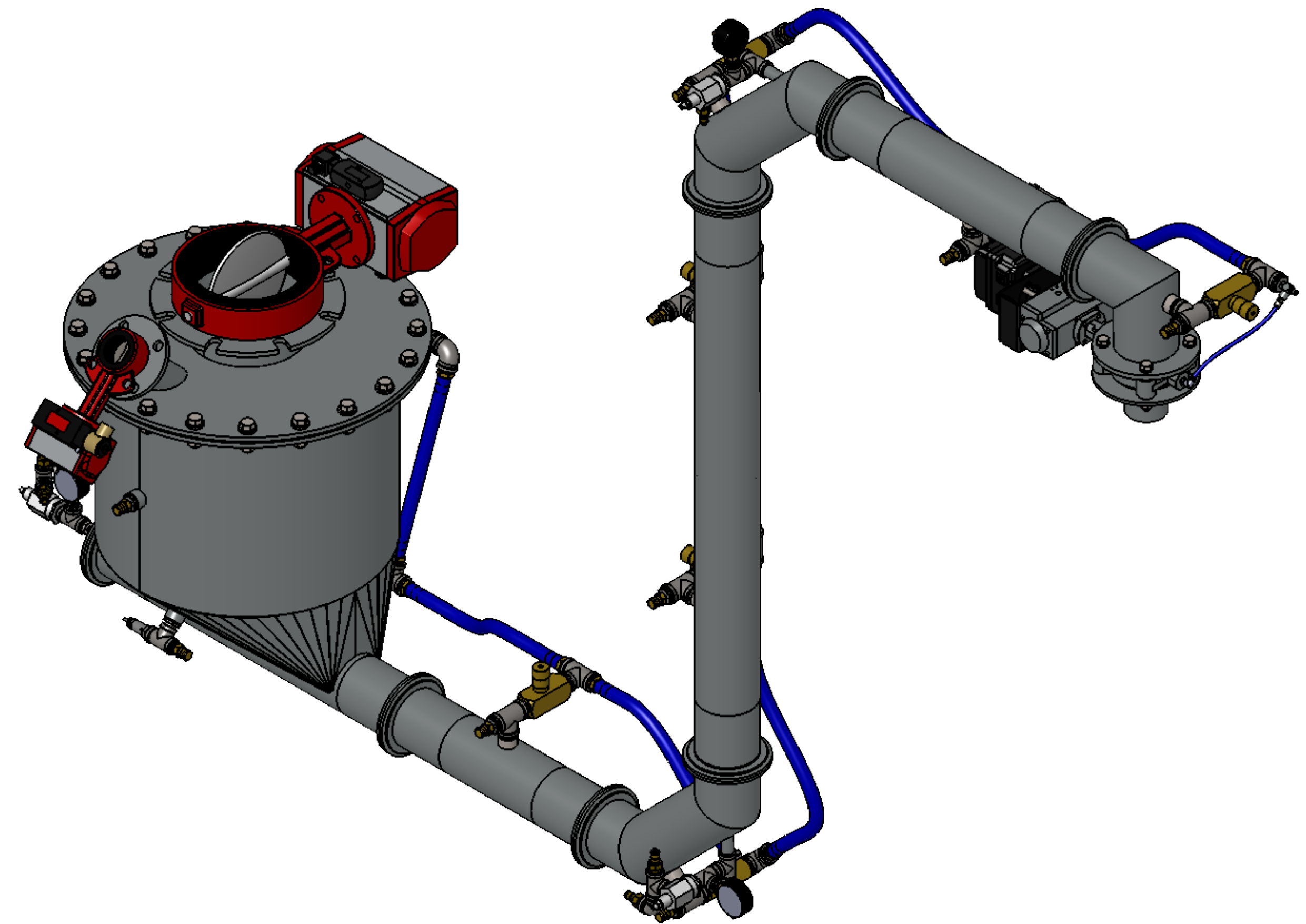
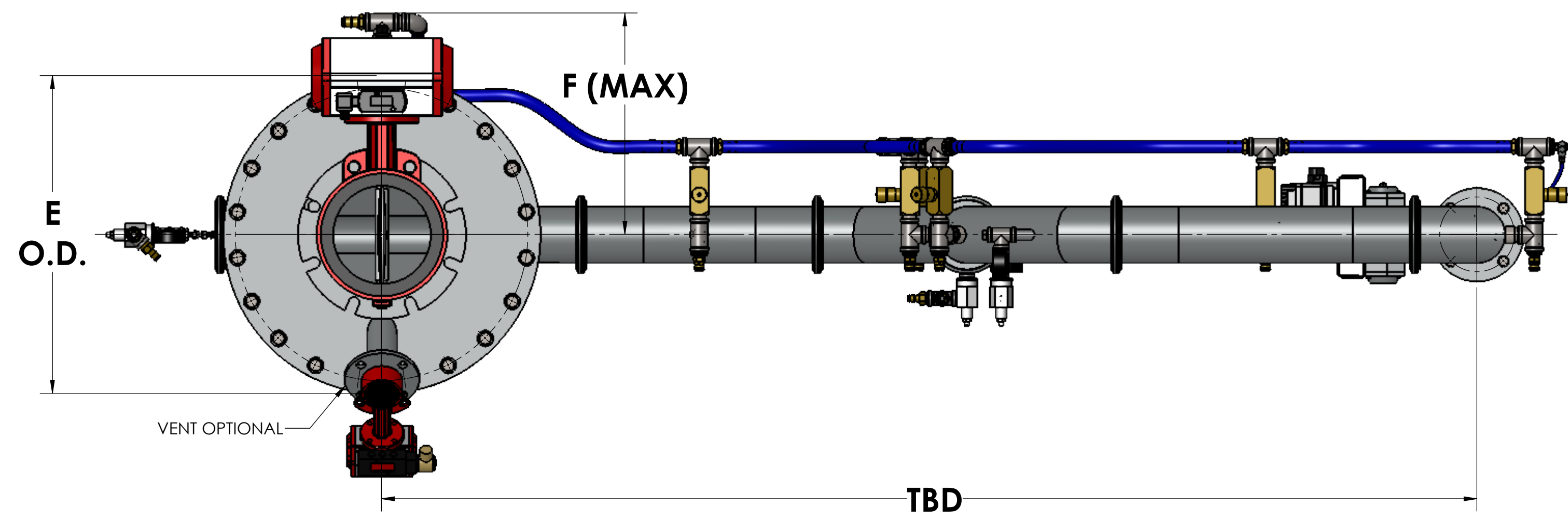
- ▶ 1.5 cu. ft. Stinger® Pump - 150 cu. ft. per hour
- ▶ 3 cu. ft. Stinger® Pump - 300 cu. ft. per hour

Note: For actual convey capacity, testing can be conducted at Young Industries Test facility.



STINGER® PUMP FLUIDIZED POWDER CONVEYING

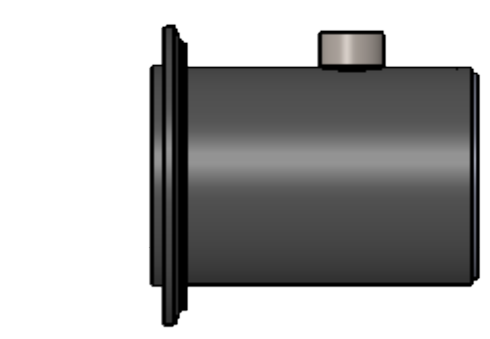




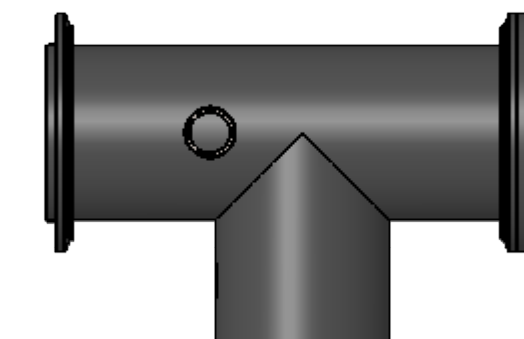
STINGER® DISCHARGE OPTION # 1
90 DEGREE ELBOW W/ SELF-ALIGNING
FLANGE CONNECTION
(SEE NOTE NO. 3)

5.00

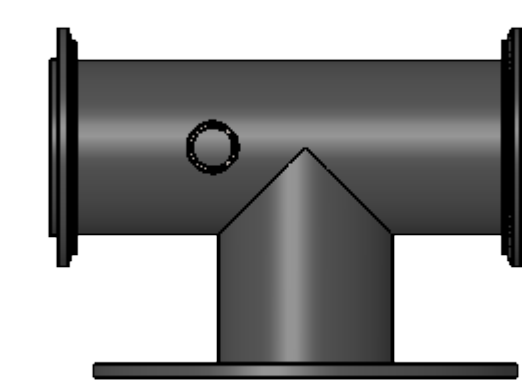
TBD



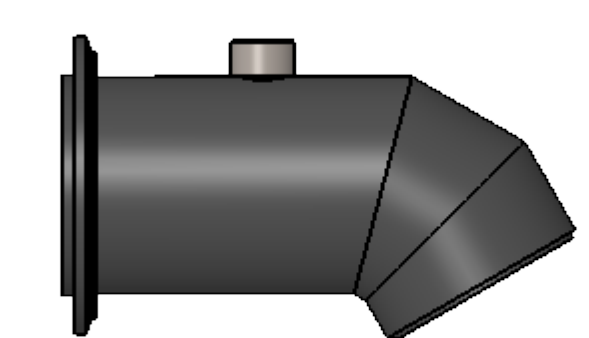
STINGER® DISCHARGE OPTION # 2
STRAIGHT DISCHARGE END
& SELF-ALIGNING FLANGE CONNECTION
(SEE NOTE NO. 3)



STINGER® DISCHARGE OPTION # 3
90 DEGREE DISCHARGE W/CLEAN-OUT PORT,
SELF-ALIGNING FLANGE CONNECTION, PLAIN
END DISCHARGE
(SEE NOTE NO. 3)



STINGER® DISCHARGE OPTION # 4
90 DEGREE DISCHARGE W/ CLEAN-OUT PORT,
SELF-ALIGNING FLANGE CONNECTION,
FLANGED DISCHARGE



STINGER® DISCHARGE OPTION # 5
45 OR 60 DEGREE ELBOW, W/
SELF-ALIGNING FLANGE CONNECTION
(SEE NOTE NO. 3)

SIZE	A	B	C	D	E	F	G
1.25	12.75	16.44	18.12	3.50	19.00	22.00	3.00
3	21.00	24.00	22.25	3.50	25.50	22.00	3.00

NOTES:

1. STINGER HOUSINGS ARE FABRICATED OF CARBON STEEL OR STAINLESS STEEL.
2. AVERAGE PLANT AIR OR GAS REQUIRES 80 PSIG.
3. STINGER DISCHARGE CAN BE SUPPLIED WITH FLANGED CONNECTION HAVING 150# ANSI DRILLING OR PLAIN END. CUSTOMER SPECIFIED.

GENERAL TOLERANCES	
UNLESS OTHERWISE SPECIFIED THE FOLLOWING SHALL APPLY	
MACHINING - .XX= .02 .XXX= .005 ANGLE= .50°	
SURFACE ROUGHNESS HEIGHT 63 MICRONS OR LESS	
FABRICATION - UNDER 6 6 TO 24 24 TO 60 OVER 60	
± .06 ± .12 ± .19 ± .25	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	

REV. NO.	DESCRIPTION	DATE	BY
REVISIONS			
CUSTOMER: POLYONE CORP			
CUSTOMER PO NUMBER: 465642			
YOUNG JOB NUMBER: 18306			
TITLE			
ASSEMBLY: STINGER PRESSURE PUMP, SIZE X-X, FLANGED INLET, SAF CONVEY LINE CONNECTION			

THE YOUNG INDUSTRIES, INC.
 MUNCY, PENNSYLVANIA 17756
 TELEPHONE: 570-546-3165

DRAWN BY: SMR	DATE: 03/07/19
CHECKED BY:	SCALE=1:8
DRAWING NUMBER: D-21118-16	SHEET 1 OF 1
	REV: 00